UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,728	01/09/2005	Casimir Johan Crawley	PU020286	9711

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2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/520,728	CRAWLEY, CASIMIR JOHAN
	Examiner	Art Unit	
	RuiMeng Hu	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a).. In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 January 2005</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) <u>12-20</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-11</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>09 January 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>01/09/2005</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Election/Restrictions

1.   This application contains the following inventions or groups of inventions which

are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Group I, **claim(s) 1-11**, drawn to a receiver for demodulating a received audio

signal (in US class/subclass 455/130).

Group II, **claims 12-18**, drawn to a communications system comprises a

transmitter and a receiver (in US class/subclass 455/41.2).

Group III, **claims 19-20**, drawn to an apparatus comprises an encoder for

converting digital audio to a modulated data and a transmission circuit for transmitting

said modulated data (in US class/subclass 455/91).

Groups I, II and III can be classified in three different subclasses, further Group I

and Group III are distinctive from one another, in addition Group I and Group III are sub-

combinations of Group II, however either Group I or Group III is not limited applying to

the system of Group II, for example invention Group I could be a FM radio player or a

cellular phone. Therefore, it can be clearly seen that the inventions do not relate to a

single general inventive concept.

2.   During a telephone conversation with Jeffery Hale on August 2, 2007 a

provisional election was made with traverse to prosecute the invention of **Group I**

claims 1-11. Affirmation of this election must be made by applicant in replying to this

Office action. **Claims 12-20** withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

Information Disclosure Statement

3.   The information disclosure statement submitted on 01/09/2005 has been

considered by the Examiner and made of record in the application file.

Claim Objections

4.   **Claim 4** is objected to because of the following informalities:

a) Replace "eight-to-four" with --eight-to-fourteen--.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

Claims 7-11 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

MPEP 2106.01 indicates "when functional descriptive material is recorded on

some computer-readable medium, it becomes structurally and functionally interrelated

to the medium and will be statutory in most cases since use of technology permits the

function of the descriptive material to be realized." **Claim 7** claims a computer readable

medium containing software instructions, but claim 7 fails to specifically claim the

software instructions is recorded on the computer readable medium, thus the software

instructions is not structurally interrelated to the medium. In addition, the specification

fails to mention examples of such computer readable medium, thus said readable

medium is not limited to physical devices and could reasonably include electromagnetic

propagating signals, which do not fall under statutory subject matter.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

8.   **Claims 1-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zuqert et al. (US 6466832) in view of **Bowles (US Patent 6389548).**

Consider **claim 1**, Zuqert et al. disclose an apparatus, comprising: reception

circuit including a frequency synthesizer (figure 7, a receiver 24, frequency synthesizer

326); a decoder (DSP 270) for digitally demodulating an audio file signal (abstract) from

said reception circuit; and a processor (DSP 270, figure 8, column 17 line 53-column 20

line 11, consider switching from frequency f1 to f2 in response to received signal quality

(error rate and signal strength), the DSP is initialized for processing received signal on

channel f2 (the new channel)) for initializing said decoder in response to signal quality in

said demodulating of said audio file signal and setting said frequency synthesizer

(frequency synthesizer 326) at one of a plurality of frequencies to re-establish receiving

signal quality and said demodulating of said audio file signal (re-establishing signal

processing as switched to the new frequency).

However, Zuqert et al. fail to disclose the signal quality includes the loss of a

phase lock in decoding.

In the same field of endeavor, Bowles discloses a receiver for receiving a

compact digital signal, a EFM decoder for decoding said compact digital signal and a

processor for monitoring said EFM decoder for a loss of a phase lock in said decoding

of said compact digital signal (column 8 lines 6-67, figure 3, slicer 37, hfSync (high

frequency synthesizer) 32, and EFM decoder 38), the phase error occurred during

decoding can be considered as poor signal quality.

Therefore, it would have been obvious to a person of ordinary skill in the art at

the time the invention was made to incorporate the selection techniques taught by

Bowles into the art of Zuqert et al. to include the measure of phase error (loss of a

phase lock) as an addition to the measure of signal quality when the received signal is a

compact digital signal as for improving output audio quality.

Consider **claim 2 as applied to claim 1**, Zuqert et al. as modified by Bowles

disclose wherein said plurality of frequencies comprises 900MHz range channel

frequencies (Zuqert et al. column 16 lines 58-62).

Consider **claim 3 as applied to claim 2**, Zuqert et al. as modified by Bowles

disclose wherein said plurality of frequencies comprises 905 MHz, 911 MHz, 917 MHz

and 923 MHz (Zuqert et al. column 16 lines 58-62).

Consider **claim 4 as applied to claim 1**, Zuqert et al. as modified by Bowles

disclose wherein said decoder comprises an eight-to-fourteen modulation EFM digital

decoder (Bowles, figure 3, EFM Demodulator 38).

Consider **claim 5 as applied to claim 1**, Zuqert et al. as modified by Bowles fail

to disclose wherein said demodulating said audio file signal provides a digital audio

stream conforming to an I2S audio format.

However, official notice is taken that I2S is used for digital electronic devices (as

a CD player) is well known in the art. Therefore, it would have been obvious to a

person of ordinary skill in the art at the time the invention was made to use I2S interface

to correspond the existing digital audio stream, and output stereo.

Consider **claim 6 as applied to claim 1**, Zuqert et al. as modified by Bowles

disclose wherein said processor is a microprocessor (Zuqert et al. figure 7, DSP 270).

Consider **claim 7**, Zuqert et al. disclose a computer readable medium containing

software instructions that, (column 16 lines 33-45, the processor containing software

instructions adaptively controls operation of the receiver), when executed by a

processor, performs the steps of: receiving a modulated audio file signal (figure 7,

Abstract); demodulating said audio file signal to a digital audio stream (figure 7, down-

converters 38, base-band processors 40); re-initializing said demodulating in response

to signal quality of said demodulating said audio file signal (DSP 270, figure 8, column

17 line 53-column 20 line 11, consider switching from frequency f1 to f2 in response to received signal quality (error rate and signal strength), the DSP is initialized for processing received signal on channel f2 (the new channel)); and setting said receiving at one of a plurality of channel frequencies to establish receiving signal quality and said demodulating of said audio file signal (re-establishing signal processing as switched to the new frequency).

However, Zuqert et al. fail to disclose the signal quality includes the loss of a phase lock in decoding.

In the same field of endeavor, Bowles discloses a receiver for receiving a compact digital signal, a EFM decoder for decoding said compact digital signal and a processor for monitoring said EFM decoder for a loss of a phase lock in said decoding of said compact digital signal (column 8 lines 6-67, figure 3, slicer 37, hfSync (high frequency synthesizer) 32, and EFM decoder 38), the phase error occurred during decoding can be considered as poor signal quality.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Bowles into the art of Zuqert et al. to include the measure of phase error (loss of a phase lock) as an addition to the measure of signal quality when the received signal is a compact digital signal as for improving output audio quality.

Consider **claim 8 as applied to claim 7**, Zuqert et al. as modified by Bowles disclose wherein said demodulating comprises a digital eight-to-fourteen modulation EFM digital decoding of said audio file signal (Bowles, figure 3, EFM decoder 38).

Consider **claim 9 as applied to claim 7**, Zuqert et al. as modified by Bowles

disclose wherein said plurality of frequencies comprise 905 MHz, 911 MHz, 917 MHz

and 923 MHz (Zuqert et al. column 16 lines 58-62).

Consider **claim 10 as applied to claim 7**, Zuqert et al. as modified by Bowles

disclose wherein said demodulating outputs a digital audio stream (Zuqert, figure 7,

digital audio stream going into D/A converter 42).

Consider **claim 11 as applied to claim 7**, Zuqert et al. as modified by Bowles

disclose wherein said re- initializing and setting is carried out by a processor (Zuqert et

al. figure 7, DSP 270).

Nonstatutory Double Patenting

9.   The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the
unjustified or improper timewise extension of the "right to exclude" granted by a patent
and to prevent possible harassment by multiple assignees.   A nonstatutory
obviousness-type double patenting rejection is appropriate where the conflicting claims
are not identical, but at least one examined application claim is not patentably distinct
from the reference claim(s) because the examined application claim is either anticipated
by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140
F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29
USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.
1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422
F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163
USPQ 644 (CCPA 1969).
        A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d)
may be used to overcome an actual or provisional rejection based on a nonstatutory
double patenting ground provided the conflicting application or patent either is shown to
be commonly owned with this application, or claims an invention made as a result of
activities undertaken within the scope of a joint research agreement.
        Effective January 1, 1994, a registered attorney or agent of record may sign a
terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with
37 CFR 3.73(b).

10.   **Claims 1-11** provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1-11 of copending Application No. 10516859** in view of **Zuqert et al. (US 6466832)**.

Consider **claim 1**, claim 1 claims apparatus, comprising: reception circuit including a frequency synthesizer; a decoder for digitally demodulating an audio file signal from said reception circuit; and a processor for initializing said decoder in response to a loss of a phase lock in said demodulating of said audio file signal and setting said frequency synthesizer at one of a plurality of frequencies to re-establish said phase lock in said demodulating of said audio file signal.

Claims 1-2 of the copending application disclose an apparatus for short range radio frequency communication comprising: a receiver for receiving an audio file signal; a decoder for demodulating said audio file signal; and a processor for polling said decoder for a loss of a phase lock in said demodulating of said audio file signal, wherein said processor resets and reinitializes said decoder in response to said loss in said phase lock.

However, claims 1-2 of the copending application fail to disclose a frequency synthesizer for providing a plurality of frequencies.

In the same field of endeavor, Zuqert et al. disclose an apparatus for short range radio frequency communication comprising: reception circuit including a frequency synthesizer (figure 7, a receiver 24, frequency synthesizer 326); a decoder (DSP 270) for digitally demodulating an audio file signal (abstract) from said reception circuit; and a processor (DSP 270, figure 8, column 17 line 53-column 20 line 11, consider switching

from frequency f1 to f2 in response to received signal quality (error rate and signal

strength), the DSP is initialized for processing received signal on channel f2 (the new

channel)) for initializing said decoder in response to signal quality in said demodulating

of said audio file signal and setting said frequency synthesizer (frequency synthesizer

326) at one of a plurality of frequencies to re-establish receiving signal quality and said

demodulating of said audio file signal (re-establishing signal processing as switched to

the new frequency).

Therefore, it would have been obvious to a person of ordinary skill in the art at

the time the invention was made to incorporate the selection techniques taught by

Zuqert et al. into the invention of the copending application as to include said frequency

synthesizer for improving signal quality and output audio quality, wherein said frequency

synthesizer generates a plurality of channel frequencies (902-928 MHz) to provide

channel frequency diversity to over come poor signal quality (i.e. bit error rate) in short

range radio frequency communication.

Consider **claim 7**, claim 7 claims a computer readable medium containing

software instructions that, when executed by a processor, performs the steps of:

receiving a modulated audio file signal; demodulating said audio file signal to a digital

audio stream; re-initializing said demodulating in response to a loss of a phase lock in

said demodulating said audio file signal; and setting said receiving at one of a plurality

of channel frequencies to establish said phase lock in said demodulating.

Claim 7 of the copending application discloses a computer readable medium

containing software instructions that, when executed by a processor, perform the steps

of: receiving a modulated audio file signal; demodulating said modulated audio file signal; polling said demodulating for a loss in a phase lock in said demodulating; and re-setting and reinitializing said demodulating in reply to said loss in said phase lock.

However, claim 7 of the copending application fails to disclose a frequency synthesizer for providing a plurality of frequencies.

In the same field of endeavor, Zuqert et al. disclose a computer readable medium containing software instructions that, (column 16 lines 33-45, the processor containing software instructions adaptively controls operation of the receiver), when executed by a processor, performs the steps of: receiving a modulated audio file signal (figure 7, Abstract); demodulating said audio file signal to a digital audio stream (figure 7, down-converters 38, base-band processors 40); re-initializing said demodulating in response to signal quality of said demodulating said audio file signal (DSP 270, figure 8, column 17 line 53-column 20 line 11, consider switching from frequency f1 to f2 in response to received signal quality (error rate and signal strength), the DSP is initialized for processing received signal on channel f2 (the new channel)); and setting said receiving at one of a plurality of channel frequencies to establish receiving signal quality and said demodulating of said audio file signal (re-establishing signal processing as switched to the new frequency).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Zuqert et al. into the invention of the copending application as to include said frequency synthesizer for improving signal quality and output audio quality, wherein said frequency

synthesizer generates a plurality of channel frequencies (902-928 MHz) to provide

channel frequency diversity to over come poor signal quality (i.e. bit error rate) in short

range radio frequency communication.

This is a <u>provisional</u> obviousness-type double patenting rejection.

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed**

to: Commissioner for Patents
                    P.O. Box 1450
                    Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to RuiMeng Hu whose telephone number is 571-270-1105.

The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m.,

EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

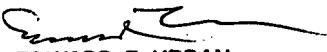Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

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RuiMeng Hu
R.H./rh
August 4, 2007

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